REVIEW OF YEAR 2000 (Y2K) READINESS OF COMPUTER SYSTEMS AT NUCLEAR POWER PLANTS

FUNCTIONAL AREA: ENGINEERING (ENG)

APPLICABILITY: All operating power plants

2515/141-01   OBJECTIVES

01.01   To review licensee Y2K program activities that ensure a level of readiness in accordance with GL 98-01 or GL 98-01 Supplement 1 guidelines.

2515/141-02   BACKGROUND

On May 11, 1998, the staff issued GL 98-01 to require licensees to provide information regarding their programs, planned or implemented, to address the Y2K problem in computer systems at their facilities. In the GL, reference is made to NEI/NUSMG 97-07, "Nuclear Utility Year 2000 Readiness" which describes an approach that licensees may utilize to address the Y2K problem at their facilities. This guidance document resulted from a joint effort between the Nuclear Energy Institute (NEI) and the Nuclear Utility Software Management Group (NUSMG).

In addition to NEI/NUSMG 97-07, the licensee received guidance for developing contingency plans for remediated software systems and embedded components, internal events, external events, and for producing an integrated contingency plan. This guidance was provided in NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Readiness Contingency Planning."

The concept of Y2K "readiness" as opposed to "compliancy" is being emphasized with regard to how licensees are addressing their Y2K problems.   As indicated in NEI/NUSMG 97-07, 'Y2K Compliant' pertains to an accurate processing of date/time data from, into, and between the twentieth and twenty-first century, the years 1999 and 2000, and leap-year calculations. 'Y2K Ready' pertains to a computer system or application that has been determined to be suitable for continued use into the year 2000 even though the

computer system, application, or device is not fully Y2K compliant.

In September 1998, NRC staff began auditing 12 representative sites to evaluate licensee Y2K programs. The scope of each audit addressed 40-50 software applications and embedded systems and components, licensee contingency planning activities, grid stability issues, and critical supplier issues. The results of these audits were provided to the licensees and were also published for public, licensee, and Congressional review on an NRC website (http://www.nrc.gov/NRC/Y2K/Y2KNRR.html).

In March 1999, following discussions with members of Congress, the Commission expanded the scope of the NRC reviews to include all nuclear power plant sites. Because timeliness of these reviews is critical, the depth of the review activities has been reduced from the scope of the audits conducted at the 12 representative sites to an abbreviated review of licensee Y2K activities. This TI provides guidance to NRC Resident Inspectors and NRC Regional Inspectors regarding the scope of the review activities and reporting requirements.

2515/141-03   REVIEW ACTIVITIES

03.01   Y2K Program. Using the Y2K reviewer's questionnaire (Attachment A), "Y2K Review Checklist," verify the licensee has implemented a Y2K Program that addresses the following areas as suggested in NEI/NUSMG 97-07 and NEI/NUSMG 98-07:

   a.   Management Planning,

   b.   Documentation,

   c.   Implementation Planning,

   d.   Initial Assessment,

   e.   Detailed Assessment,

   f.   Remediation Activities,

   g   Y2K Testing and Validation,

   h.   Notification Activities, and

   i.   Contingency Planning.

2515/141-04   REVIEW GUIDANCE

GENERAL GUIDANCE

Notification of Review. The reviewer should notify the licensee of the onsite review and should confirm that key licensee personnel involved with the Y2K Program will be available.

<u>Document Review</u>. The following reference documents provide guidance to support the Y2K reviews.

  a. Generic Letter 98-01
      (http://www.nrc.gov/NRC/GENACT/GC/GL/1998/gl98001.html)
  b. Generic letter 98-01, Supplement 1
      (http://www.nrc.gov/NRC/GENACT/GC/GL/1998/gl98001s1.html)
  c. NEI/NUSMG 97-07, "Nuclear Utility Year 2000 Readiness"
      (http://www.nei.org/library/97-07.pdf)
  d. NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Contingency
      Plans" (http://www.nei.org/library/NEI9807.pdf)

<u>Onsite Review</u>. This review should include a review of relevant documentation, and interaction with the plant Y2K project manager. Examples of relevant documentation are: the facility Y2K management plan, implementation plan, inventory listing/database, initial and detailed assessment documents, remediation activity documentation, Y2K testing and validation records, notification documentation, and contingency plans.

<u>SPECIFIC GUIDANCE</u>

04.01   <u>Y2K Program</u>

NEI/NUSMG 97-07 suggests a five phase approach to ensure that a licensee's plant continues to operate safely and within the requirements of their license and NRC regulations. The status of the implementation of these phases and schedules for remaining activities, including planning and coordination of Y2K-related work during currently planned outages, should be examined against the July 1, 1999, Y2K readiness date in GL 98-01. The allocation of resources for completion of the phases should also be reviewed.

The scope of the licensee's Y2K program generally includes all plant software, embedded systems, and interfaces that may be affected by the Y2K problem. The reviewer should confirm that the licensee has included in the inventory and assessment phase a review of embedded software systems. The Y2K program plan should provide appropriate emphasis on safety-related systems/components and systems required for safe operation at the initial and detailed assessment stages via the categorization, classification and prioritization activities of the program.

In addition to the information provided in NEI/NUSMG 97-07, contingency planning, as described in NEI/NUSMG 98-07, should be reviewed.   Contingency actions to be taken in the event that unanticipated occurrences or malfunctions occur should be reviewed against the potential concerns identified in the Y2K program.

Contingency planning activities address three types of hazards: 1) remediation hazards, 2) internal hazards, and 3) external hazards. The reviewer should confirm that all three evaluations are considered in the integrated plant Y2K contingency plan.

The reviewer should complete the attached Y2K review checklist, which provides guidelines for the review.   Comments regarding

specific questions should be appended to the checklist as appropriate. If the reviewer completes the checklist by hand, the reviewer should transfer the hand-written results to an electronic version of the checklist.   This transfer effort will require approximately one hour of additional effort.   Consequently, the reviewer should plan his review effort accordingly.

2515/141-05   REPORTING REQUIREMENTS

The reviewer will document the results of the review in the attached Y2K review checklist. The resident's routine inspection report will state that the Y2K TI was completed and include a copy of the "Summary of Checklist Answers" (An example is shown in Attachment B).   Since portions of a licensee's Y2K readiness program documentation may be located in the licensee's corporate office, part of the review for one or more plant sites may be conducted at the that location. In these cases, the results of the review effort at the corporate office location should be transferred to the review checklists for each of the affected plant sites.

The completed checklists will be forwarded to the Regional Headquarters, where each will be compiled electronically with other checklists in a summary format.   The completed checklists and the resulting summary report will be forwarded to Mr. Matt Chiramal (mxc) at NRC Headquarters in electronic format.

2515/141-06   COMPLETION SCHEDULE

Forward the review checklists to the Regional staff when completed, but no later than June 30, 1999.   Each Region shall compile the checklists electronically and forward to Mr. Matt Chiramal (mxc) at NRC Headquarters by July 1, 1999.   NRC Headquarters will prepare a report summarizing the review checklist results by July 31, 1999.

2515/141-07   EXPIRATION

This TI will expire on September 30, 1999.

2515/141-08   TECHNICAL CONTACT

Address questions regarding the technical aspects of this TI to Matthew Chiramal, (301) 415-2845 (mxc), or Michael Waterman, (301) 415-2818 (mew1).

2515/141-09   STATISTICAL DATA REPORTING

Direct review effort expended in completing the requirements of this TI is to be charged to TI 2515/141, with Inspection Program Element (IPE) SI.

10.01 <u>Organizational Responsibility</u>

This TI was initiated by EEIB/DE/NRR.

10.02 <u>Resource Estimates</u>

All nuclear power plant sites will be reviewed under this TI. For the 12 plant sites that were previously audited by the NRC, this TI will be used for review of the plant-specific Y2K program activities conducted since the audit (i.e., the licensee's assessment activities starting at question 100 and contingency planning activities starting at question 700 in Attachment A).

The resource estimate to complete this TI is 40 hours per review.

10.03   <u>Other</u>.   No parallel procedures exist for this TI.

10.03 <u>Training</u>.   One day of training is required for this TI.

Attachments:

A.   Y2K Review Checklist for Temporary
          Instruction 2515/141

B.   Summary of Checklist Answers

END